

REMARKS

This Amendment is fully responsive to the non-final Office Action dated February 4, 2009, issued in connection with the above-identified application. A petition for a one-month extension of time accompanies this Amendment. Claims 1-8 were previously pending in the present application. With this Amendment, claims 1-8 have been canceled without prejudice or disclaimer to the subject matter therein; and claims 9-25 have been added. Accordingly, claims 9-25 are all the claims now pending in the present application. No new matter has been introduced by the new claims added. Favorable reconsideration is respectfully requested.

To facilitate the Examiner's reconsideration of the application, the Applicants have provided amendments to the specification, abstract and the figures. The changes to the specification and the abstract include minor editorial and clarifying changes. Additionally, the changes to Figs. 48-51 include the addition of "Prior Art" legends to the figures. Replacement paragraphs, a replacement abstract, and replacement sheets for Figs. 48-51 are enclosed. No new matter has been introduced by the amendments made to the specification, the abstract and the figures.

In the Office Action, claims 1-8 have been rejected under 35 U.S.C. 102(b) as being anticipated by Hansen (U.S. Patent No. 6,069,597). The Applicants have canceled claims 1-8 thereby rendering the above rejection to those claims moot. Additionally, the Applicants assert that the cited prior art fails to disclose or suggest at least the features of independent claims 9, 10, 21 and 23-25. For example, independent claim 9 includes the following features:

“[a] visual processing device comprising:

a visual processing unit operable to determine a conversion characteristic for an image signal that has been input in accordance with information on surroundings obtained from a plurality of pixels surrounding a target pixel, convert the target pixel in accordance with the conversion characteristics and output an output signal generated by performing visual processing to the image signal; and

a parameter output unit operable to output an adjustment parameter based on a parameter expressing the ambient light,

wherein the visual processing unit outputs the output signal generated by adjusting the

brightness and/or the local contrast of the image signal based on the contrast between an average signal value of a plurality of pixels surrounding the target pixel and the value of the target pixel, and corrects the degree of adjustment of the brightness and/or the local contrast of the image signal based on the adjustment parameter.” (Emphasis added).

The features emphasized above in independent claim 9 are similarly recited in independent claims 10, 21 and 23-25. Additionally, the features emphasized above in independent claim 9 (and similarly recited in independent claims 10, 21 and 23-25) are fully supported by the Applicants’ disclosure (see e.g., Fig. 40; and pg. 106-109).

The present invention (as recited in independent claims 9, 10, 21 and 23-25) is distinguishable over the cited prior art in that the present invention uses the pixel information surrounding the target pixel and displays good images (preferable images) only by changing (converting) luminance. Thus, there is no need to consider the effect of the ambient light. Additionally, the present invention can display good images without increasing the output of the display device itself.

That is, unlike general image correction processing, the uniform gradation correction (e.g. gamma correction where γ is constant) in the present invention (as recited in independent claims 9, 10, 21 and 23-25) is not performed on the entire image. Instead, a characteristic of the gradation correction (e.g., tone level correction) is determined based on the contrast between the target pixel and the surrounding pixels.

Therefore, the gradation correction can be optimally performed to the dark area and the bright area on the screen. Thus, the present invention provides the advantageous effect of being able to display preferable images on the screen even when the dynamic range of the display device is narrow due to the ambient light.

In the Office Action, the Examiner relies on Hansen for disclosing all the features of the present invention. However, the Applicants assert that Hansen fails to disclose or suggest the features recited in at least independent claims 9, 10, 21 and 23-25.

Hansen discloses a circuit and method for controlling the brightness of a display screen implemented using a flat panel field emission display (FED). In Hansen, a light sensor supplies a brightness signal that changes in proportion to the ambient light sensed. Thus, the FED screen

brightness is increased in response to increases in the light sensor output and decreased in response to decreases in the light sensor output.

Thus, the main object of Hansen would appear to be directed to varying the physical output of the display device in response to ambient light. On the other hand, in the present invention, there is no discussion (disclosure) or suggestion (no need) to increase the output of the display device even when the luminance of the image signal to be displayed is changed (converted).

In addition, the present invention uses the pixel information surrounding the target pixel and displays good images (preferable images) only by changing (converting) luminance. Thus, there is no need to consider the effect of the ambient light. Hansen, on the other hand, is silent with regard changing a conversion characteristic using the pixel information surrounding the target pixel when the gradation correction of pixel is performed.

In summary, the present invention (as recited in independent claims 9, 10, 21 and 23-25) has a feature that a tone conversion characteristic is determined using the pixel information surrounding the target pixel, which is clearly not disclosed or suggested by Hansen. And, the present invention effectively reduces adverse effects due to the ambient light, which cannot be achieved by Hansen.

Based on the above discussion, independent claims 9, 10, 21 and 23-25 are not anticipated or rendered obvious by Hansen. Additionally, claims 11-20 and 22 are not anticipated or rendered obvious by Hansen at least by virtue of their respective dependencies from independent claims 9, 10 and 21.

In light of the above, the Applicants respectfully submit that all the pending claims are patentable over the prior art of record. The Applicants respectfully request that the Examiner withdraw the rejections presented in the outstanding Office Action, and pass the present application to issue.

The Examiner is invited to contact the undersigned attorney by telephone to resolve any remaining issues.

Respectfully submitted,

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